REMARKS

Reconsideration of the above application is respectfully requested.

Claims 1-3, 5, 7, 8, 10, 13, 18, 21-23, 25, 27-29, 33 and 38 are rejected as being unpatentable under 35 U.S.C. 103(a) over Bischof et al. (US 5,300,019). These rejections are respectfully traversed.

Applicant and agent thank Examiner Gurzo for the informative and constructive discussions held on October 23, 2003, from which stem the current amendments . By this amendment, Applicant has made appropriate changes to the claims in lines with discussions with Examiner Gurzo, in particular to incorporate limitations such as having the height of the annular processing passage small enough, the cylindrical apparatus members rotate relative to each other rapidly enough and the two closely-spaced smooth surfaces are smooth enough to provide an annular processing passage constituting a flow path for essentially Taylor vortex-free mixing the material, in opposition to the teachings of Bischof et al. (US 5,300,019), the primary reference relied upon in the pending 35 U.S.C. 103 (a) rejections of claims 1-3, 5, 7, 8, 10, 13, 18, 21-23, 25, 27-29, 33 and 38.

Bischof et al. does not teach, consider or suggest any such limitations for the apparatus or methods taught therein. In fact, Bischof et al. teaches that the apparatus and methods of that patent require that the "...rotating spinner 24 creates secondary fluid flow patterns called vortices 46 within in the gap 26 (see FIG. 5). The vortices 46 spiral in a helical path along the axis of rotation 42. These vortices 46 are sometimes referred in the technical literature to as "Taylor Vortices" (see Taylor, "Stability of a Viscous Liquid Contained Between Two Rotating Cylinders", Proc. of the Royal Society, V151 (1935), pp. 289-343)." (Col. 5, lines 16-21).

Additional limitations wherein the height of the annular processing passage is less than the penetration depth of said processing energy are recited in amended independent claims 1 and 21. Again, Bischof et al. does not teach, either inherently or explicitly, the use of an apparatus or methods by which an annular processing passage is less than the penetration depth of processing

energy applied thereto. In fact, the whole of the teachings of Bischof et al. are in direct opposition to the presently pending claims, as the use of and requirement of Taylor vortices in the Bischof et al apparatus is required to evenly expose material in the annular passage to applied radiation, to which they would not otherwise be exposed to, since the penetration depth of processing energy utilized therein does not reach through the height of the annular passage, as taught by the present disclosure. Additionally, our claims fail to recite limitations of "gold and the like" as stated by the Examiner in the final office action.

Claims 6, 14, 26 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bischof et al. (5,300,019), and in further view of Holl (5,538,191). Additionally, claims 4, 11, 12, 16, 17, 19, 20, 24, 31, 32, 36, 37, 39, 40 and 41 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Bischof et al. (5,300,019) in view of applicant's admitted prior art. The secondary reference (Holl 5,538,191) nor the applicant's admitted prior art do not teach such or suggest such limitations and thus do not make up for the deficiencies of the teachings of Bischof et al., as discussed above and with Examiner Gurzo on October 23, 2003.

Applicant respectfully requests the Examiner to withdraw all 35 U.S.C. 103 (a) rejections of the allowable independent claims and all claims that depend therefrom.

It is clear that 35 U.S.C. §103 requires an analysis of the claimed invention **as a whole**, i.e. an analysis of the claimed combination of elements, including each and every limitation encompassed by the pending dependent claims. Even where the claimed invention is comprised of individual components well known at the time of invention, "[w]hat must be found obvious to defeat the patent **is the claimed combination**." The Gillette Co. v. S.C. Johnson & Son Inc., 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). Thus, the presently amended independent claims and all dependent thereon are allowable.

As maintained by the Examiner, the cited art does not specify the claimed use of electromagnetic energy and Applicant does in fact state that the use of such energy is well known. However, use of electromagnetic energy is only one particular aspect of the instant

invention, and the cited art does not, as shown in the above discussions, teach or disclose the use of electromagnetic energy in the manner taught by the instant application and as presently claimed.

In light of the discussion above, Applicant respectfully requests that the Examiner withdraw all 35 U.S.C. 103(a). rejections.

In view of the above, it is submitted that this application is now in good order for allowance, and such early action is respectfully solicited. Should matters remain which the Examiner believes could be resolved in a telephone interview, the Examiner is requested to telephone the Applicant's undersigned agent.

The Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **50-2638**.

Respectfully submitted,

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